

DESCRIPTIONS OF THREE NEW SPECIES OF THE GENUS HYPOPYGIOPSIS TOWNSEND FROM YUNNAN, CHINA (DIPTERA, CALLIPHORIDAE)

WEILianMeng

Centre for Disease Prevention and Control of Anshun City, Guizhou 561000 China; E-mail: wlm510520@sina.com

Abstract Three new species of the genus *Hypopygiopsis* Townsend, 1916 (Diptera: Calliphoridae), namely, *H. yunnanensis* sp. nov., *H. dactylis* sp. nov. and *H. diversis* sp. nov., are described and illustrated from Yunnan, Southwestern China. A key to the known species of *Hypopygiopsis* is provided, and both *H. fumipennis* group and *H. violaceae* group are set up. The type specimens of the new species are kept in the Centre for Disease Prevention and Control of Anshun City, Guizhou (CDPCAG).

Key words Diptera, Calliphoridae, *Hypopygiopsis*, new species, new species groups, China

The genus *Hypopygiopsis* Townsend, 1916 is a small genus belonging to subfamily Calliphorinae, tribe Lucini (Diptera: Calliphoridae). Up to the present only 5 species of this genus has been recorded from the Oriental Region. In this paper, 3 new species are described and illustrated from Yunnan, Southwestern China. A key to the known species of the genus is provided.

Hypopygiopsis Townsend, 1916

Proc. U. S. Nat. Mus., 51, no. 2: 152–300. Type species *Hypopygiopsis philensis* Townsend, 1916 = *Hypopygiopsis fumipennis* (Walker, 1857), by original designation.

Diagnosis Body usually stout and large with metallic green, blue and violet. Eyes of male subhypoptic. Antennae with first flagellomere large, long strip-like. Arista long-plumose. Acrostichal seta usually (1–2) + (1–2). Dorsocentral seta 3+3. Anterior postpronotal seta 1 and basal postpronotal seta 3. Intra-alar seta 3+2. Prosternum with hairs. Propisternum with hairs. Katatergite with long black and erect hairs. Anatergite with hairs. Tympanic and posterior parasquamal tufts present. Subcostal sclerite usually with black setulae. Vein r_{4+5} setose dorsally and ventrally reaching to half way of crossvein $r-m$. Male legs with long fringes and usually with thick and strong fore femur. Male sternites usually with soft hairs or fringes. Male with hypopygium large and prominent and epandrium usually with a narrow or wide small lobe (a finger-like process) on anterior-lower corner, which is unique characteristic differing from other members of related genus. Otherwise, the genus with aedeagus and gonites quite different from those of related genera.

Distribution The Oriental Region.

Abbreviations used for characters: *a*-anterior seta; *ad*-antero-dorsal seta; *av*-antero-ventral seta; *C*-costa; *d*-dorsal seta; f_1 -fore femur; f_2 -mid femur; f_3 -hind femur; *LI*-fore leg; *LII*-mid leg; *LIII*-hind leg; *p*-posterior seta; *pd*-postero-dorsal seta; *pv*-postero-ventral seta; t_1 -fore tibia; t_2 -mid tibia; t_3 -hind tibia. The type specimens of the new species are kept in Centre for Disease Prevention and Control of Anshun City, Guizhou (CDPCAG).

Key to known species of the genus *Hypopygiopsis* Townsend

1. Fronto-orbital plate and parafacial with golden yellow pruinosity ... 2
Fronto-orbital plate and parafacial with silver white pruinosity, with at most slightly yellowish; male terminalia with cercus and surstylus held together closely in profile; dorsolateral process simple, with only anterior processes of basal part without long distal part which curved toward anteriorly; postgonite not branched apically (*H. violaceae* group) ... 5
2. Postsutural acrostichal seta 1; syntergite 1+2 blue, not black; venter and its hairs not so conspicuously yellow; legs and abdomen robust and stout (Indonesia) ... *H. robusta* **Malloch**
Postsutural acrostichal seta 2; syntergite 1+2 not blue; male terminalia with cercus and surstylus branched off widely in profile; dorsolateral process with long distal part which curved in hook-like toward anteriorly; postgonite branched apically (*H. fumipennis* group) ... 3
3. Body metallic violet blue; syntergite 1+2 brown; sternite reddish yellow and densely with golden yellow long fringes; cerci slender fork-shape with two lobes divided widely viewed from posterior view (Yunnan, China) ... *H. diversis* **sp. nov.**
Body metallic bluish green; syntergite 1+2 blackish, slightly with dark blue or purple tinge; sternite yellow and with yellow hairs; cerci with two lobes not divided widely viewed from posterior ... 4
4. Male F_2 and f_3 remarkably stout; f_3 curved and densely with fringes; t_2 and t_3 with strongly developed fringes; mid one with characteristic apical projection. Female: Posterior margin of sternite 5 subequal to the length of lateral margin the same tergite (Borneo, Malaya, Singapore, Southern Thailand and Sumatra) ...
... *H. fumipennis* (Walker)
Male F_2 and f_3 normal; hind one slightly curved; t_2 and t_3 with

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- short and rather sparsely fringes mid one without chitinous projection Female Posterior margin of stemite 5 about half the length of lateral margin of the tergite (Yunnan and Hainan, China; Bengal, Cambodia, India and Thailand) *H. tumrasini* **Kurahashi**
5. Calypter yellow or brownish yellow, but the connective part of upper and lower ones yellowish white 6
Calypter whitish with pale brown tinge or fuscous brown 7
6. Male tarsi with long fringes (Yunnan, China) *H. dactylis* **sp. nov.**
Male tarsi without fringes (Yunnan, China)
..... *H. yunnanensis* **sp. nov.**
7. Calypter whitish, with pale brown tinge Male T_3 with stout strong apical *d* and *ad* (Yunnan and Hainan, China; Bengal, Burma, Cambodia, India, Laos, Thailand and Viet Nam)
..... *H. infumata* (**Bégot**)
Calypter fuscous brown Male T_3 with two long and fine apical *d* and *ad* (Anambas Is., Borneo, Java, Malaya, Sembilan Is., Singapore and Sumatra) *H. violacea* (**Macquart**)

Hypopygiopsis yunnanensis **sp. nov.** (Figs 1–4)

Male Body length about 10 mm.

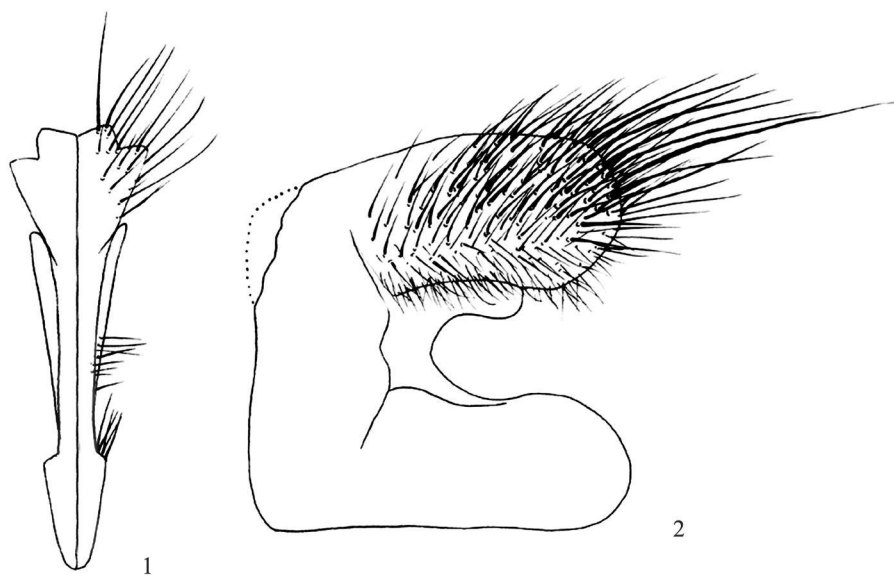
Metallic shining green species Head Eyes bare Frons separated, about as wide as 1.5 of flagellomere width or about 0.14 of head width at narrowest point Frontal vitta black, somewhat reddish anteriorly, which slightly wider than fronto-orbital plate Posocellar seta and paraverticlar seta undeveloped Inner vertical seta developed Outer vertical seta fine and weak Fronto-orbital plate dark, slightly yellowish, covered with yellowish white pruinosity except vertex darkened Frontal seta 9, the upper 2–3 undeveloped, which reach to the front of ocellar triangle The outer of frontal seta row with a row of pale hairs, becoming 2 rows anteriorly. Reclinate orbital seta 1, developed Para-facial bare, dark reddish yellow, with denser white pruinosity, tinged with yellow, which about as wide as that of first flagellomere Genal groove darkish red, with silver pruinosity, haired above gena Antennae with scape and pedicel brownish black, first flagellomere darkish yellow, but red basally, about 4.4 times as long as pedicel Lunule brownish black, bright, absent from pruinosity Arista brownish yellow, with long plumose Face concave, darkish yellow, with silver grey pruinosity Facial carina absent Facial ridge with black setae on lower 2/3 Lower facial margin protruding, somewhat beyond out frons in profile Vibrissa strong Gena reddish dark, thinly grey pollinose, which about 0.25 times as high as eye, with black hairs Prementum yellowish brown, slender, about 4.1 times as long as high Papus yellowish brown Occiput (including postgena) densely with pale hairs

Thorax Shining metallic green blue scutum grey pollinose, mainly distribute in presutural area, which with irregular black grey submedian vittae and regular black triangular spot behind postpronotal lobe in posterior view Pleuron darkish brown, but

katapistemum, posterior larger part of mesopleura anterior half of pteropleura and notopleuron metallic green blue All hairs and setae on pleuron black or brownish black but for ones on propionerion pale Acrostichal seta 2+2 Dorsocentral seta 3+3 Supra-alar seta 2+4 postsutural 1st one developed, about as long as posterior notopleural seta; postsutural 2nd one weaker Anterior postpronotal seta 1 and basal postpronotal seta 3 Intra-alar seta 3+2 Notopleuron and anatergite with hairs Postpronotal lobe with a tuft of pale hairs anteriorly Prosternum brown, with brown hairs Proepisternum with dense yellow hairs Pteropleura with dense setae and hairs Front of meron with setae and hairs Katapistemum densely with strong long and bent setae ventrally Katapistemal seta 2: 1 Katapistemum bare Katatergite with long black and erect hairs Tympanic and posterior parasquamal tufts present Anterior parasquamal tuft absent Thoracic spiracles black brown Scutellum lacking of pollinosity, with same colour as scutum; scutellar seta 1: 4 (discal scutellar seta: pairs of marginal scutellar seta).

Wing brownish yellow, with veins brown, absent of spot Equale and basicosta brownish black Spine reduced Vein C haired ventrally, but behind less than half of 4th section bare Vein stem bare Dorsum of radial node with thick and short black thorns and haired ventrally Vein r_{4+5} setose dorsally and ventrally reaching to half way of crossvein *rm*. Calypter brownish yellow, but the connective part of upper and lower ones yellowish white The latter bare dorsally Halter blackish brown, but brownish yellow basally.

Leg Brownish black, but pale brownish black from tibia to distal tarsomere, claws brown LI: F_1 with fringes ventrally T_1 with a shallow cut at base ventrally, ventral surface with long fringes except base bare, which downwards gradually becoming short 3 *ad* present, which as short as hairs, and with 1 *pv* at middle Tarsi without fringes LII: F_2 with a thick and strong a at middle and with a row of fine and weak *av*, which shorter and denser on apical 1/3 ventral surface with short and dense soft hairs, postero-ventral surface with 4 in a row, longer fringes on basal 2/5, and with a row of hair-like *pv* distally, with 2 inclined apical *pd* T_2 with 1 strong *ad*, 1 *pd* and 2 *pv*, and with a row of fine and weak *pv* on apical 2/3 the piles on ventral surface on distal 2/3 longer Tarsi without fringes LIII: coxa with dense fringes ventrally F_3 slightly bent, with a row of short and dense setae on antero-dorsal surface, with a row of weak, fine and long setae on postero-ventral surface, in which several in apex somewhat thicker and longer, with undeveloped 1 *pd* and 2 *d* distally T_3 with longer piles on ventral side, with 3 fine and weak *av*; with 2 *ad*



Figs 1– 2 *Hypopygiopsis yunnanensis* sp. nov. 1. Cercus in posterior view. 2. Sternite 5 in ventral view.



Figs 3– 4 *Hypopygiopsis yunnanensis* sp. nov. 3. Cercus and surstylus in profile. 4. Aedeagus, pregonite, postgonite and epiphallus in profile.

and 2 *pd*, respectively, in which lower ones situated near middle developed with a hair-like *ad*. Basale tarsomere with a tuft developed spine-like hairs at base ventrally. Legs with claws and pulvilli long and strong. Tarsi without fringes but with golden yellow

fine hairs

Abdomen. With same colour as thorax but hardly grey white pruinosity. Syntergite 1 + 2 somewhat dark. Tergites 3 to 5 dark yellowish brown on margin ventrally with dark green narrow posterior

marginal bands clearly. Tergites 3 with lateral setae. Tergites 4 and 5 with developed marginal setae. Tergites 1 to 4 with long fine and long setae or fringes ventrally. Tergites 6 exposed, interrupt in mid part, dark with marginal setae. Tergites 7+8 dark yellow red on posterior margin, with fine lateral setae in mid part. Tergite without discal seta. Sternites 1 to 4 with dense fringes. Sternite 5 densely with fine and long setae. Hypopygium: epandrium large, with long bristles. Cercus arrow-like posterior view. Both cercus and surstylus shining blackish brown, which slender and straight in profile and with claws at tips. Terminalia as shown in Figs 1–4.

Female Unknown

Holotype ♂, Menglin (21°56'N, 101°15.3'E; alt 540m), Xishuangbanna, Yunnan, Tropical Rain Forest, 22 June 1993, collected by WEI Lian-Meng and LIU Guo-Bing.

The new species is related to *H. infimatu*, but can be separated from the latter by the first flagellomere mainly darkish yellow, about 4.4 times as long as pedicel; ♀ ventral surface with long fringes only distributed in basal 2/3 (in *H. infimatu*, ♀ ventral surface with long fringes distributed in all length); ♂ without basally, ventral surface with long fringes and base bare; ♀ only with 4 longer fringes on postero-ventral surface in basal 2/5; ♂ and ♀ without fringes; tarsi absent from fringes; calypter brownish yellow, the connective part of upper and lower ones yellowish white; halter blackish brown, brownish yellow basally; terminalia sternite 5 with lateral lobe rectangle but not square; pregonite right triangle instead of isosceles triangle; basiphallus sclerotized weakly; anterior processes of basal part of dorso-lateral process with sharp apex, dull round in the latter; basal ventral process of hypophallus long hook-like.

Based on the following characters, this new species and *H. dactylis* sp. nov. in this paper and *H. infimatu* (Bigot) and *H. violacea* (Macquart) may be considered to establish a new species-group. *H. violacea*-group: fronto-orbital plate and parafacial with silver white pruinosity, at most with slight yellowish tone; postsutural acrostichal seta 2; male terminalia with cercus and surstylus hold together closely in profile; dorso-lateral process simple, with only anterior processes of basal part without long distal part which curved toward anteriorly; postgonite not branched apically.

Etymology. The specific name refers to the type locality, Yunnan in southwest China.

Hypopygiopsis dactylis sp. nov. (Figs 5–8)

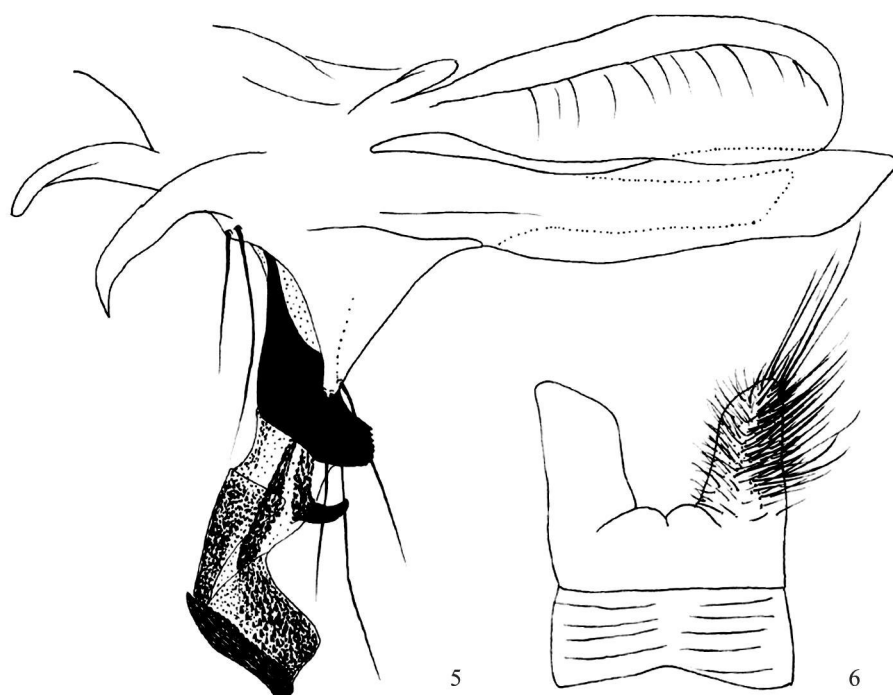
Male. Body length about 15 mm.

Metallic green with reflection of copper species. Eyes bare. Frons separated about 1.7 times as wide

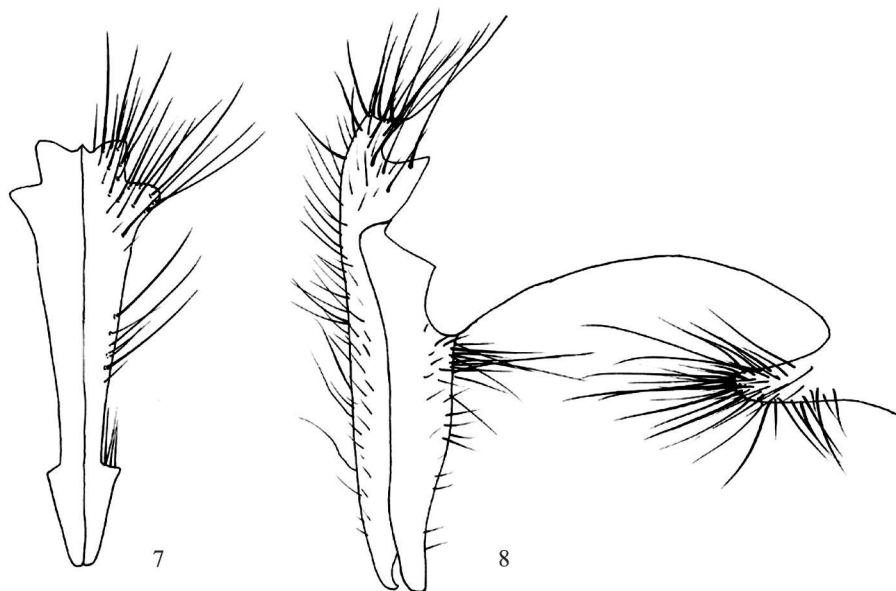
as first flagellomere width or about 0.12 of head width at narrowest point. Frontal vitta darkish brown in anterior half and darkish red in posterior half. Fronto-orbital plate dark, seems with darkish yellow tone, remarkable darkish yellow in lower part, covered with yellowish grey-white pruinosity but for vertex darker, at most slightly narrower than frontal vitta, in which out side of frontal setae with a row of hairs in upper half. Reclinate orbital seta 1, developed. Frontal setae 14, posterior 4 fine. Parafacial bare, yellowish red with same colour pruinosity with Fronto-orbital plate, which wider than first flagellomere width. First flagellomere yellowish red, but scape and pedicel black brown, which is rather longer and wider strip-like, longer than 6 times of pedicel-length. Arista yellow-brown red, long plumose but bare apically. Face concaved, with same colour as parafacial, but thinly dusted. Facial ridge with black setae on lower 2/3. Lower facial margin protruding somewhat beyond out frons in profile. V-brissa strong. Genus concours with parafacial, with grey pollinosity, which about 0.25 times as high as eye, with black hairs. Prementum yellowish brown, slender, about 5 times as long as high. Palpus yellowish red. Occiput (including postgena) densely with pale hairs.

Thorax. Shining metallic green blue, with reflection of copper, covered with grey pollinosity, mainly distribute in presutural area, mesonotum unclear black submedian vittae, which extend over transverse suture and black triangular spot behind postpronotal lobe in posterior view. Acrostichal seta 2+2. Dorsocentral seta 3+3. Supra-alar seta 2+3, postsutural 1st one developed, about as long as posterior notopleural seta. There is a undeveloped seta present between postsutural 1st supra-alar seta and postsutural 2nd one. Anterior postpronotal seta 1 and basal postpronotal seta 3. Intra-alar seta 3+2. Notopleuron and anatergite with black hairs, ones of the latter brownish. Postpronotal lobe with a tuft of pale hairs frontly. Prosternum brown, with brownish hairs. Proepisternum with dense yellow hairs. Pteropleura with dense setae and hairs. Front of meron setae with hairs. Katepisternum densely with strong long and bent setae ventrally. Katepisternal seta 2: 1. Katepimeron bare. Katepisternite with long black and erect hairs. Tympanic and posterior parasquamal tufts present. Anterior parasquamal tuft absent. Thoracic spiracles brownish black, posterior spiracule with 3 long setae posteriorly. Scutellum same colour as scutum; scutellar seta 1 (2): 4 (discal scutellar seta, pairs of marginal scutellar seta).

Wing (apical half of right wing break off in holotype) brownish yellow, with veins brownish yellow, absent of spot. Equale and basicosta blackish brown. Spine reduced. Vein c haired ventrally, reaching



Figs 5- 6 *Hypophygopsis dactylis* sp. nov. 5. Aedeagus: pregonite, postgonite, epiphallus, aedeagal apodeme and hypandrial apodeme in profile. 6. Sternite 5 in ventral view.



Figs 7- 8 *Hypophygopsis dactylis* sp. nov. 7. Cercus in posterior view. 8. Cercus and surstylius in profile.

to base of 4th section. Vein stem bare. Dorsum of radial node with thick and short black spicule and haired ventrally. Vein r_{4+5} setose dorsally and ventrally reaching to half way of crossvein rm . Calypter yellow, but the connective part of upper and lower ones whitish yellow. The latter bare dorsally. Halter yellow, base with a little yellowish red and head with some brownish.

Leg Black, brownish, tibia reddish; claws

yellowish red. LI: F_1 without fringes. T_1 with long and dense fringes ventrally, with 2 short and weak *ad* basally. Tarsomeres 1-4 with fringes posteriorly. LII: F_2 with a thick and strong *a* at middle and with 2 *av* apically, in which distal one developed, ventral surface with dense soft hairs, which at most as long as f_2 diameter, and with 2 inclined *pd* apically. T_2 with 1 strong *ad* and 2 *pd*, respectively, with rather longer and denser fringe on ventral surfaces. Tarsomere with fringes posteriorly, but ones on tarsomere 5 sparse. L

III: coxa densely with strong long and bent setae F_3 clearly bent with a row of short and dense setae on antero-dorsal surface with a row of sparse weak setae on postero-ventral surface in which several near apex thicker and denser, and in multiple rows which at most as long as f_3 diameter; ventral surface densely with fine and long fringes; piles on anterior surface dense and long without developed setae distally. T_3 with long and dense fringes from anterior to postero-ventral surfaces in which ones on both basal and distal parts of postero-ventral surface short and weak; with 3 *ad*, basal one hair-like and with 2 *pd*, densely with a tuft short setae distally on postero-ventral surface. Tarsomere 1 – 4 densely with fringes anteriorly, which gradually becoming weaker toward apex. Legs with claws and pulvilli long and strong. Tarsi with golden yellow fine hairs.

Abdomen With same colour as thorax, but syntergites 1 + 2 violetish dark blue. Tergites 3 to 5 with dark narrow posterior marginal bands. Tergites 6 darkish brown with anterior marginal band which is divided by a pale vitta. Tergites 7 + 8 dark blue with blackish brown posterior margin, which shining absent pruinosity with some hairs and densely with fine and long marginal setae. Tergite 4 with lateral setae undeveloped. Tergite 5 with complete marginal setae, only a pair of them developed. Tergite without discal setae. Sternite brownish black. Sternite 1 haired. Sternites 2 to 4 densely with long black fringes. Sternite 5 darkish red-yellow, large, lies low ventrally; lateral lobe densely with long setae. Hypopygium. Epandrium strongly developed, bluish black with long setae but bare dorsally. Cerci arrow-like in posterior view. Cercus and surstylus shining blackish brown, which slender and straight in profile, the former with claw at tip. Terminalia as shown in Figs 5 – 8.

Female Unknown

Holotype ♂, Menglin (21°56'N, 101°15.3'E; alt 540m), Xishuangbanna Yunnan, Tropical Rain Forest, 22 June 1993, collected by WEI Lian-Meng and LIU Guo-Bing. Paratype 1 ♂, Pingq Yangbi Yunnan, alt 1420m, 27 Aug., 2006, collected by YANG ZaiHua.

The new species is related to *H. infimatus*, but can be separated from the latter by the antennae yellowish red but scape and pedicel black brown, first flagellomere longer than 6 times of pedicel-length, both f_1 and f_2 without fringes, tarsomeres of LII – III with fringes, terminalia sternite 5 with lateral lobe rectangle, which with lateral lobe narrow apically; basiphallus sclerotized weakly; anterior processes of basal part of dorso-lateral process with sharp apex but dull round in the latter; hypophallus ventral process in base is long hook-like.

Etymology. The species name is from Latin word

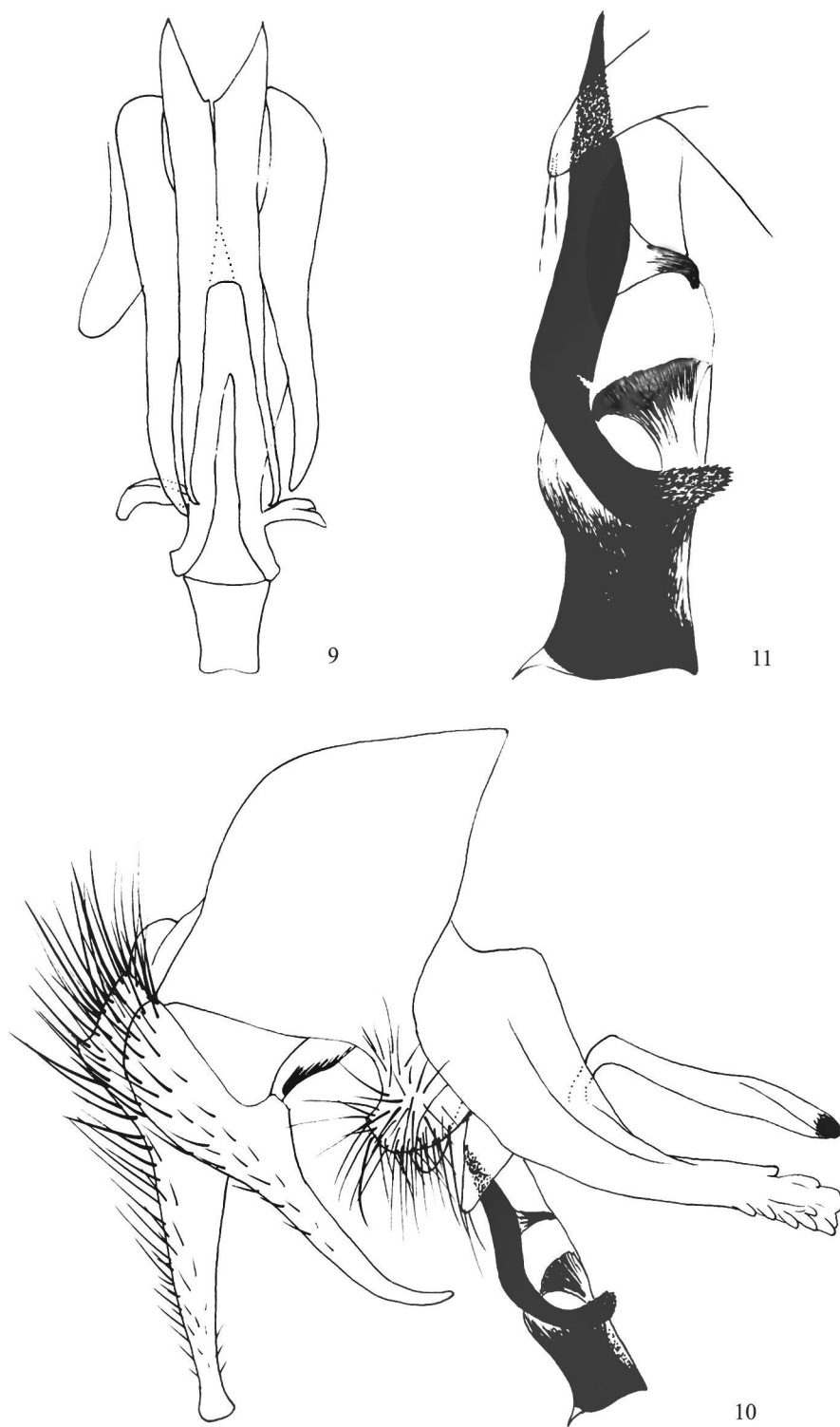
“*dactylis*”, meaning “finger”, which refers to its epandrium with a finger-like process on anterior-lower corner.

Hypopygiopsis diversis **sp. nov.** (Figs 9 – 13)

Male. Body length about 14mm.

Metallic violet blue species. Eyes bare. Frons separated, about 1.5 times as wide as first flagellomere-width or about 0.1 of head width at narrowest point. Frontal vitta darkish brown-red yellow anteriorly, about 2/3 times as wide as fronto-orbital plate in the narrowest part. Fronto-orbital plate covered with dense golden yellow pruinosity but for vertex darker, and with pale hairs in above. Reclinate orbital seta 1, rather long and strong. Frontal setae 9, posterior 2 as weak as hairs. Parafacial with same colour as frons, bare, slightly broadened downward, which about 1.3 times as wide as first flagellomere-width in middle. First flagellomere yellowish red but scape and pedicel reddish yellow, which is rather longer and wider strip-like, about 1.5 times as long as itself width or about 4.8 times of pedicel-length. Arista brown-yellow, long plumose but bare apically. Face concaved with same colour as parafacial but thinly dusted. Facial ridge with black setae on lower 1/4. Lower facial margin protruding somewhat beyond out frons in profile. Vbrissa strong. Genus concolours with parafacial, about 0.26 times as high as eye, with golden yellow hairs. Pronotum slender, yellowish brown, about 4 times as long as high. Palpus brownish yellow. Occiput (including postgena) densely with golden yellow hairs.

Thorax. Metallic violet blue, covered with grey yellow pollinosity; mesonotum with grey yellow submedian vittae in posterior view, wider median vittae and triangular dark spot behind postpronotal lobe. Pleuron violet blue with yellow red partly, especially on pteropleura, meron and katatergite. Acrostichal seta 2 + 2. Dorsocentral seta 3 + 3. Supraalar seta 2 + 4, postsutural 1st one developed as long as posterior notopleuron seta; postsutural 2nd one fine and weak. Anterior postpronotal seta 1 and basal postpronotal seta 3. Intra-alar seta 3 + 2. Notopleural densely with erect long hairs. Anatergite with a tuft short brown hairs. Postpronotal lobe with pale hairs in front half. Prosternum brownish yellow, with yellow hairs. Proepisternum with dense yellow hairs. Pteropleura with dense black setae and brown fringes. Front of meron setae with some pale fine hairs. Katepisternum densely with strong long and bent setae ventrally. Katepisternal seta 2: 1. Katepimeron bare. Katatergite with long black and erect hairs. Tympanic and posterior parasquamal tufts present. Anterior parasquamal tuft absent. Thoracic spiracles brown. Scutellum with same colour as scutum; scutellar seta 1

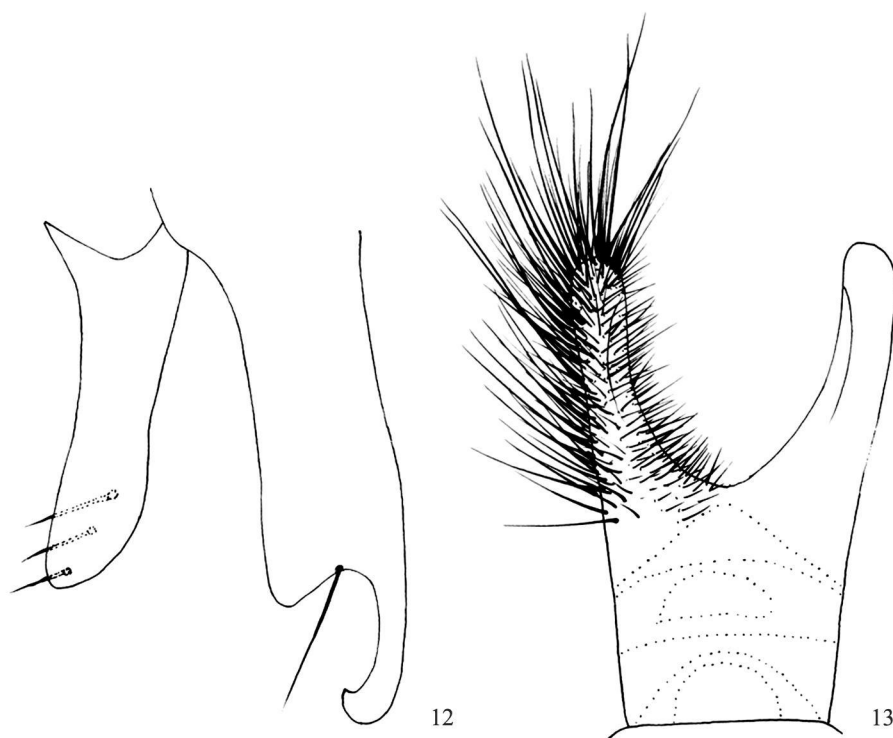


Figs 9– 11. *Hypophypsis diversis* sp. nov. 9. Cereus surstylus and aedeagus in posterior view. 10. Cereus surstylus aedeagus aedeagal apodeme and hypandrial apodeme in profile. 11. Aedeagus in profile.

: 4 (discal scutellar seta: pairs of marginal scutellar seta).

Wing yellow, veins brownish yellow to darkish brown, absent of spot, but base and anterior margin brown, especially posterior half behind crossvein rm with yellowish brown cloudy. Around both M_{3+4} and

CuA_1 with yellowish brown cloudy. Equalet and basicosta brown. Spine retrograde. Vein C haired ventrally over middle of 4th section. Vein stem bare. Dorsum of radial node with thick and short black thorns and haired ventrally. Vein r_{4+5} setose dorsally and ventrally reaching half way to rm . Calypter



Figs 12– 13. *Hypopygiopsis diversis* sp. nov. 12. Pregonite and postgonite in profile. 13. Sternite 5 in ventral view.

brownish yellow, upper and lower ones whitish yellow, especially connective part of both upper and lower ones. The latter bare dorsally. Halter yellowish red.

Leg. Brown to darkish red but for coxae yellowish red and trochanter deeply reddish yellow. **LI**: F_1 with dense fringes in more than half ventrally. T_1 with long and dense fringes arranged in rows from antero-ventral to postero-ventral surface but for base with normal pile; with 2 short and weak *ad*. Tarsomere without fringes. **LII**: F_2 flat ventrally; with a thick and spine-like *a* at middle and with 2 spine-like *av*; densely with erect short spine-like piles on basal 2/3 of ventral surface in which distal ones on antero-ventral and postero-ventral surfaces clearly as strong as spines, especially that of the latter stronger than others; with a row of 6 setae on postero-ventral surface which as weak as hairs; with 3 inclined *pd* apically. T_2 with erect spine-like piles except from antero-ventral to postero-ventral surface basally; with 1 *ad*; with a row of short and weak setae in distal half and densely with a row of tidy fine and long *pv* in distal 2/3 on postero-dorsal surface which gradually developed toward tip. Tarsomere without fringes. **LIII**: coxa densely with strong long and bent setae. F_3 clearly bent; with a row of sparse setae on antero-dorsal surface in which ones in middle long and strong with a row of fine and long setae on antero-ventral surface in which distal several thick and

strong densely with fine and long setae on postero-ventral surface in which apical ones arranged in multiple rows and gradually becoming shorter toward tip with dense fringes ventrally; with 2 inclined *pd* apically. T_3 densely with long and erect hairs ventrally without fringes; *av* (in a row) fine and long which mixed in long piles of ventral surface and remarkably developed toward apex; with 2 *ad*, lower one developed and with 1 *pd*; with a row of fine and long setae about in basal half on postero-ventral surface with a group fringe-like hairs on basal postero-ventral surface. Tarsomere without fringes.

Abdomen. With same colour as thorax but with thinly grey pruinosity; tergites without spots or vittae. Synergites 1 + 2 brown. Tergites 4 and 5 with developed marginal setae. Tergites 5 with developed setae and hairs. Sternites reddish yellow, densely with golden yellow long fringes but for ones on tergite 4 shorter and darker. Tergite without discal seta. Sternite 5 fork-shaped, darkish red-brown, densely with blackish brown long setae and fringes. Hypandrium smaller metallic blue green, only exposed epandrium posteriorly. Tergites 4 and 5 and epandrium brightly darkish blue-green. Cerci blackish brown, slender fork-shaped, two lobes divided widely viewed from posterior; one of which with expanded apex in profile. Surstylus bent hook-like in profile. Terminalia as shown in Figs 5– 6.

Female Unknown

Holotype ♂, Menglin (21°56'N, 101°15.3'E; alt 540m), Xishuangbanna Yunnan Tropical Rain Forest 22 June 1993 collected by WEI Lian-Meng and LIU Guo-Bing

The new species is related to *H. tumra-sini* Kurahash, but can be separated from the latter by thorax metallic violet blue, covered with grey yellow pollinosity; ♀ with dense fringes in more than half ventrally; ♂ and ♀ without fringes with a row of short and weak *pd* in distal half and densely with a row of tidy fine and long *pv* in distal 2/3 which gradually developed toward tip; ♀ with dense fringes ventrally; male terminalia with cerci blackish brown, slender fork-shape in posterior view, aedeagus with different characters in details

Based on the following characters, the new species *H. funphensis* (Walker) and *H. tumra-sini* Kurahashi may be considered to establish a new species-group *H. funphensis*-group: fronto-orbital plate and parafacial golden yellow; postsutural acrostichal seta 2; male terminalia with cercus and surstylus branched off widely in profile; dorsolateral process

with long distal part which curved in hook-like toward anteriorly; postgonite branched apically.

Eymology. The species name is from Latin word “*divers*”, meaning “divide”, which refers to its cercus is divided widely viewed from posterior.

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中国云南巨尾蝇属三新种记述 (双翅目, 丽蝇科)

魏濂

贵州省安顺市疾病预防控制中心 安顺 561000

摘要 记述采自云南的巨尾蝇属 *Hypopygiopsis* Townsend 3 新种: 云南巨尾蝇 *Hypopygiopsis yunnanensis* sp. nov., 指突巨尾蝇 *H. dactylis* sp. nov. 和离叶巨尾蝇 *H. diversis* sp. nov.。文中编制了该属所有已知种的检索表, 新种详细的形态特征及其与近缘种的鉴别特征, 并建立了两个新种群: 紫色巨尾蝇群 *H. violaceae*-group 和斑翅巨尾蝇群 *H. funphensis* group。新种的模式标本保存于作者所在单位。

云南巨尾蝇, 新种 *Hypopygiopsis yunnanensis* sp. nov. (图 1 ~ 4)

雄 体长约 10 mm。新种类似瘦突巨尾蝇 *H. infumata* (Bigot 1877), 但可据下列特征与之区别: 触角鞭节主要呈暗黄色, 大约是梗节长的 4.4 倍; 前足股节腹面的长缨毛仅分布在基部 2/3 (瘦突巨尾蝇的则在整個股节全长的腹面分布有这样的长缨毛; 前足胫节基部腹面具刻缺, 腹面具长缨毛, 但基部腹面裸; 中足股节仅在基部 2/5 的后腹面具 4 个长缨毛; 中、后足胫节无缨毛; 跗节无缨毛; 腋瓣黄褐色, 上下腋瓣交接处白黄色; 平衡棒黑褐色, 但基部黄褐色; 尾器: 第 5 腹板侧叶呈长方形而后者为方形; 前阳基侧突呈直角三角形而非等腰三角形; 基阳体骨化弱; 侧阳体基部前突具尖锐的端部而不是钝圆的端部; 下阳体基部腹突呈长的钩形。

根据下列特征, 新种和本文中的指突巨尾蝇, 新种 *H. dactylis* sp. nov. 以及瘦突巨尾蝇 *H. infumata* (Bigot 1877) 和紫色巨尾蝇 *H. violaceae* (Macquart 1835) 等 4 个种可考虑

建立一个新种群, 紫色巨尾蝇群 *H. violaceae*-group。侧额和侧颜具银白色粉被, 至多带点黄色调; 沟后中鬃 2。雄尾器: 肛尾叶和侧尾叶侧面观紧密连接在一起; 侧阳体单纯, 仅有基部前突, 而没有长的, 末端呈钩状弯曲的端部; 后阳基侧突端部不分叉。

正模 ♂, 云南西双版纳勐仑热带雨林, 540 m, 1993 年 6 月 22 日, 魏濂、刘国斌采集。

词源: 新种的名称来自其模式产地云南。

指突巨尾蝇, 新种 *Hypopygiopsis dactylis* sp. nov. (图 5 ~ 8)

雄 体长约 15 mm。体呈闪铜光的金属绿色。新种类似瘦突巨尾蝇 *H. infumata* (Bigot 1877), 但可据下列特征与之区别: 触角黄红色, 仅柄节和梗节呈黑褐色, 鞭节大于梗节长的 6 倍; 前、中足股节无缨毛, 中、后足跗节具缨毛; 尾器: 第 5 腹板侧叶呈长方形, 端部收缩变狭, 端阳体骨化弱; 侧阳体基部前突的端部较尖锐, 而后者为钝圆; 下阳体基部腹突呈长钩形。

正模 ♂, 云南西双版纳勐仑热带雨林, 540 m, 1993 年 6 月 22 日, 魏濂、刘国斌采集。副模 1 ♂, 云南漾濞平坡, 1420 m, 2006 年 8 月 27 日, 杨再华采集。

词源: 拉丁词 “*dactylis*”, 意为 “指状的”, 在此指第 9 背板前下角具指状的突起。

离叶巨尾蝇, 新种 *Hypopygiopsis diversis* sp. nov. (图 9 ~ 13)

雄 体长约 14 mm。体呈金属紫蓝色。新种类似斑翅巨尾蝇 *H. tumra-sini* Kurahash 1977, 但可据下列特征与之区

别：胸部呈体呈金属紫蓝色，具灰黄色粉被；前股超过基部一半腹面密具缨毛，中胫和后胫无缨毛，端半部具 1 列短而弱的后背鬃并在端部 2/3 密具 1 列整齐的，向端部去渐次发达的细长后腹鬃；肛尾叶黑褐色，后面观呈细长的，很宽地分开的叉状，阳茎在细节上具备不同的特征。

根据下列特征，新种与斑翅巨尾蝇 *H. fanipensis* (Walker, 1857) 和拟斑翅巨尾蝇 *H. tumrasvini* Kurahashi, 1977 可考虑建立一个新种群，紫色巨尾蝇群 *H. violace-*

关键词 双翅目，丽蝇科，巨尾蝇属，新种，新种群，中国。
中图分类号 Q969.44

group 侧额和侧面具金黄色粉被；沟后中鬃 2 雄尾器：肛尾叶和侧尾叶侧面观很宽地分离；侧阳体不单纯，除基部前突外，尚具长的，末端呈钩状弯曲的端部；后阳基侧突端部分叉。

正模 ♂，云南西双版纳勐仑热带雨林，540 m，1993 年 6 月 22 日，魏濂蓿、刘国斌采集。

词源：拉丁词 “*divers*”，意为“分离的”，在此指肛尾叶后面观左右两叶很宽地分开。